Supplementary information:

Supplementary Figure 1. Screenshots of examples SNPs in the genes identified generated by targeted DNA next-generation sequencing in Emirati diabetic patients. Mutations generated using vcftools and visualized using IGV.

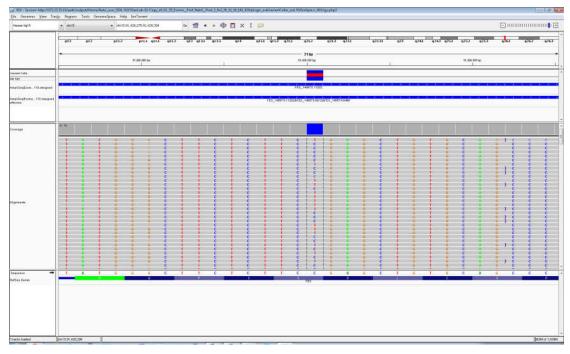
A- ASAH1



B- FES

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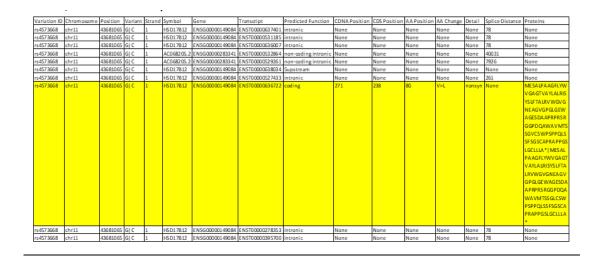
C- LPR4



D- HSD17B12



Supplementary Figure 2; List of the location and functional consequences of rs4573668 as predicted by SNPnexus tool.



Supplementary Table 1: Enriched Ontology Clusters of the identified 34 genes associated with the UAEDIA-phenotypes.

Pathway Id	Pathway Description	Parent Description	Genes	Gene Count
R-HSA-1266738	Developmental Biology	Developmental Biology	HNF1B,FES,FOXO3,HOXA3	4
R-HSA-162582	Signal Transduction	Signal Transduction	FES,MADD,FOXO3,PRC1	4
R-HSA-1430728	Metabolism	Metabolism	HSD17B12,STARD3,NAT2	3
R-HSA-1433557	Signaling by SCF-KIT	Signal Transduction	FES,FOXO3	2
R-HSA-196071	Metabolism of steroid hormones	Metabolism	HSD17B12,STARD3	2
R-HSA-556833	Metabolism of lipids	Metabolism	HSD17B12,STARD3	2
R-HSA-8957322	Metabolism of steroids	Metabolism	HSD17B12,STARD3	2

Supplementary Table 2. List of the 4 identified SNPs in HSD17B12 gene in two Emirati diabetic patients, with their location and significance in gene expression.

ID	SNP	Chromosome	Position	Overlapped Gene	Annotation				
chr11:43681065:G/C:1	<u>rs4573668</u>	chr11	43681065	HSD17B12	intronic,coding nonsyn,5upstream				
chr11:43750999:A/G:1	<u>rs12801203</u>	chr11	43750999	HSD17B12	intronic,non-coding intronic				
chr11:43754184:A/G:1	<u>rs4643069</u>	chr11	43754184	HSD17B12	intronic,non-coding intronic,3downstream				
chr11:43830941:T/C:1	<u>rs6485471</u>	chr11	43830941	HSD17B12	intronic,non-coding intronic,non- coding				